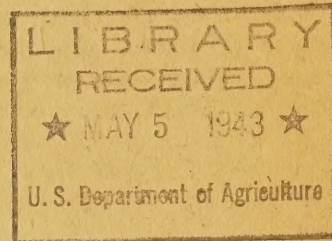


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UNITED STATES DEPARTMENT OF AGRICULTURE

Bureau of Agricultural Economics



MANPOWER IN AGRICULTURE FOR 1943

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## SUMMARY

Replacing approximately 1 million persons who will go from agriculture into the armed forces and into industrial and other employment and increasing the total number of agricultural workers by 200,000 is the prospective task for agriculture between July 1942 and July 1943, if present trends continue. This assumes that the armed forces will increase to 8 million by the end of 1943 and that the proportion coming from farms will be the same as it has been, that nonagricultural employment will increase from 42.1 million on July 1, 1942 to 44.0 million on July 1, 1943, that full employment (except for a minimum level of "frictional" unemployment) will be achieved by the end of 1943, that total annual productivity of agricultural workers will continue to increase, and that the net movement from farms will continue at current levels through 1943. Losses of manpower in agriculture up to the middle of 1942 have already been largely replaced; although some 2 million persons 14 years of age and over have shifted out of agriculture between April 1940 and July 1942, the volume of agricultural employment at the beginning of July 1942 was 12 million, slightly lower than in July 1940.

Some of the likely means of replacing the prospective losses during the year ahead are: the entrance into agricultural employment of 550,000 rural-farm women not now employed, slightly over half of these replacing women who migrate or shift into nonagricultural employment; a reduction of 50,000 in the number of rural-farm males who are unemployed; a replacement of 200,000 men by the net increase (over deaths) in rural-farm males of working age during the year; an increase of 100,000 in persons living on farms doing non-agricultural work who give some time to agriculture; and an increase of 100,000 in children under 14 in agricultural employment. To raise total agricultural employment on July 1, 1943 by 200,000 persons over that on July 1, 1942 would require, in addition to the above replacements, the utilization of an additional 200,000 nonfarm residents in agricultural work.

By October 1943, additional withdrawals of about 300,000 would need to be similarly replaced, thus bringing to a total of one and one-half million the number of persons who will need to be drawn into agricultural employment between July 1, 1942 and October 1, 1943. Of these only a quarter million will become available through normal growth in the working age segment of the rural-farm population.

Meeting the needs for agricultural labor in 1943 will require greater efforts for more effective distribution and utilization of workers and machinery; fuller utilization of farmers and farm workers in areas which still have underemployed farm people; intensive efforts for recruiting, training, and effectively using types of workers who formerly were not considered in the labor market; and adjustments in wages and working conditions.



## MANPOWER IN AGRICULTURE FOR 1943 AND 1944

American agriculture faces the task of increasing production and at the same time contributing a portion of its manpower to the armed forces and to war and civilian industries. It has met this three-fold task from the beginning of the defense effort to the present. To continue to do so will require increased reliance on persons who normally are not agricultural workers; specifically it requires further increases in the number of women and children working in agriculture and an increase in the number of persons from villages and cities who work on farms during the height of the season. It means also more effective distribution and utilization of machinery and labor, and increased production on those farms where this can be done without increasing the number of workers. Even though available manpower is more fully utilized, and there is greater reliance upon persons not usually included in the farm labor supply, the stringency of many local situations may be expected to increase. Nonetheless, it is reasonable to anticipate that agriculture's needs during the 1943 season can be met if available workers can be moved quickly to the areas where they are needed.

This statement is based on a number of assumptions. The major assumptions are:

1. That the armed forces will increase to 8 million by the end of 1943, and the proportion of men in the armed forces coming from the farms will be the same as it has been in the recent past.
2. That the total labor force within the country including the armed forces will increase from 58.8 million on July 1, 1942 to 63.4 million on July 1, 1943 and to 64.2 million on October 1, 1943. The increase in the civilian labor force will come about in large part as the result of an increase in women employed.
3. That the number of unemployed, including those on emergency work, will be reduced from 2.7 million on July 1, 1942 to 2.1 million in October 1943. This is almost equal to full employment, for 2 million appears to be a minimum unemployment level if allowance is made for temporary lay-offs, time lost between jobs, illnesses and other similar hindrances to 100 percent employment of all workers, as well as persons who can be employed only on emergency projects.
4. That nonagricultural employment will increase from 42.1 million on July 1, 1942 to 44.0 million on July 1, 1943.
5. That intensive efforts will be made to maintain agricultural employment at a level necessary to meet production goals for 1943, which may be higher than those for 1942, and to distribute workers to the areas where they are needed.
6. That the number of nonfarm residents working on farms during the peak season in 1943 can be increased by at least 200,000 above the 1942 level.



7. That there will continue to be some increase in the total annual productivity per worker in agriculture through more effective utilization and distribution of workers, reduction of loss of time between jobs, reorganization of some enterprises, elimination of non-essential operations, etc.
8. That the net movement from farms between April 1940 and July 1942 was 1.6 million persons and that, in addition, there was a net loss of 0.8 million workers who continued to live on farms but shifted into nonagricultural jobs.
9. That the net movement from farms will be 1 million persons per year in 1942 and 1943.

The figures given in this memorandum are estimates for the period ahead of what is likely to happen should the assumptions on which they are based turn out to be correct descriptions of the course of events. Whenever the course of events makes it necessary to modify these assumptions, the figures and the conclusions will also need to be modified.

#### The Situation to July 1942

From the time the last census was taken, only a month before the fall of France, the farm population has decreased from 30.2 million to 29.4 million persons. There was a net migration of 1.6 million persons from farms, but, as usual, there were more births than deaths to offset partially the losses by migration.

Included in this net out-migration from farms are about 450,000 inductees into the armed forces and 900,000 ~~persons~~ <sup>workers or potential</sup> workers, plus some children. In addition to these, some 800,000 persons on farms took on nonagricultural jobs, but continued to live on farms. Altogether these shifts account for the loss of approximately 2 million persons from the on-farm labor supply between April 1, 1940 and July 1, 1942. They have been largely replaced since employment on farms on July 1, 1942 was only slightly lower than on July 1, 1940. The replacements came from several sources, partly from the increase between April 1940 and April 1942 of 300,000 rural-farm women and 200,000 children under 14 who were working on farms on April 1, 1942. An additional replacement of approximately 400,000 males resulted from the fact that during the 2-year interval increases in the working age groups of rural-farm males exceeded deaths by this number, nearly 90 percent of the increase occurring in the age group 20-34. Had there been no other losses of manpower, this increase through ageing would have been sufficient to supply the inductions into the armed forces until April 1942, but not since then. The reduction in unemployment of rural-farm persons from 1 million in April 1940 to about 350,000 in April 1942 provided another source of replacements. From April to July 1942 a further increase occurred of approximately 800,000 rural-farm women and of 200,000 children employed in agriculture as a result of seasonal factors and the continuation of the trend in replacements of losses by women and children.



On July 1, 1942 there were approximately 12 million persons working in agriculture, slightly more than a year previously, and about the same number as in October 1941. These workers included 9.3 million persons 14 years old and over, working primarily in agriculture and living on farms, and 1.2 million persons 14 years old and over not living on farms. In addition, there were about 600,000 children under 14 working on farms, and some 900,000 persons who lived on farms and worked in agriculture two days or more a week in addition to carrying on a nonagricultural job.

The presence of 9.3 million farm persons 14 years old and over who were engaged in agriculture as a major occupation in July 1942 represents numerous adjustments already made since April 1940. In April 1940 only about four-fifths of all males 14 years old and over on farms were working. By July 1942 virtually all of the farm males 14 years old and over who were capable of performing any work were at work. The 6 percent who were not working included a few unemployed, but was composed chiefly of persons who were physically or mentally incapable of taking part in farm work. Farmers were using virtually all available males - students, older men, and those who would not be employed if labor were plentiful - and they were employing increased numbers of women.

During the same time among persons living on farms there was an increase in the number who although continuing to live on farms were working at non-agricultural activities. In April 1940 there had been 2,070,000 men and women in this category; by July 1942 these had been increased to 3,500,000 persons, but some of these persons continued to be available for some farm work, especially at peak seasons.

#### Looking Ahead to 1943

After the 1942 production goals for agriculture had been set, the number of workers needed to meet those goals was estimated as about 12 million during the peak season of 1942, approximately the level of employment actually reached by the beginning of July 1942. In 1942, as compared with 1941, an increase of about 9 percent in agricultural production is being accomplished with virtually the same number of persons working on farms.

The increase is being accomplished even though it is necessary to use more inexperienced workers and more young and old workers, most of whom cannot be expected to do as much work per day as the workers in the young adult age groups, 21-35, who were most affected by the movement to nonfarm employment and into the armed forces. The increased output per worker resulted from more efficient utilization of machinery and labor, longer work days, favorable yields, greater efforts to provide continuous employment for workers, cooperative endeavors to meet local labor needs, reorganization of some farm enterprises to reduce seasonal fluctuations in labor requirements and somewhat more complete utilization of the time of farmers whose farming operations are too limited to provide full-time employment. Some further increases in the average output per worker may be expected as these and similar measures are more widely and more intensively applied.



Therefore an increase of as much as 5 percent in agricultural production in 1943 would probably not require so large a percentage increase in the number of workers, unless the increased production were to come primarily in crops with high labor requirements. On the assumption that when production goals for 1943 are set they will call for an increase of at most 5 percent, the labor requirements for July 1, 1943 are estimated at 12,200,000, an increase of 200,000 over the level reported for July 1, 1942.

If there were no need for the rural-farm population to supply additional manpower to the armed forces and to nonagricultural industry, an increase, in the number of agricultural workers would be relatively easy to accomplish, for the number of men coming into the working age group during the year would be almost sufficient to provide 200,000 persons above the numbers needed to fill the gaps caused by death.

However, if the assumptions hold as to volume and source of inductions into the armed forces, as to volume of civilian migration away from farms, and as to increase in nonagricultural employment of rural-farm persons, there will be a gross loss of 1 million rural-farm persons from agricultural employment between July 1, 1942 and July 1, 1943. Nearly a half million men taken into the armed forces, over 100,000 civilian migrants, and nearly 100,000 men shifting from agricultural to nonagricultural employment without change of residence comprise the 700,000 males of the 1 million gross loss. Approximately 100,000 female migrants and over 200,000 women who shift from agricultural to nonagricultural employment make up the remaining 300,000.

To replace the loss it will be necessary to go even farther in drawing upon persons not usually in the labor force than has been the case by the middle of 1942. The 300,000 rural-farm females lost to agricultural employment through migration and occupational shifts could be replaced by an equal number of rural-farm women not now in the labor force. The 700,000 rural-farm males lost through inductions, civilian migration, and occupational shifts could be replaced by 50,000 males from the rural-farm unemployed, the 200,000 by which males coming into the working age during the year exceed the number lost through death, 250,000 rural-farm women not now in the labor force, 100,000 children under 14, and 100,000 rural-farm residents doing nonfarm work who give some time to agriculture, especially at seasonal peaks.

To increase agricultural employment in July 1943 by 200,000 persons over July 1942 will require, in addition to the above replacements, the tapping of nonfarm sources for persons who can be made available for farm work. It is assumed in this connection that 1.2 million nonfarm persons, the number estimated as working in agriculture in July 1942, will continue to be available for such work in July 1943. If any considerable number of them shift to nonagricultural occupations during the year, the total number of replacements which need to be found will be increased accordingly. No doubt extraordinary recruiting efforts and patriotic appeals will be needed to bring about an increase in the number of agricultural workers coming from nonfarm areas.



If these adjustments are made, the working force in agriculture on July 1, 1943 will include 9.1 million persons over 14 living on farms and reporting agriculture as their major occupation, 1.4 million nonfarm persons working in agriculture, 0.7 million children under 14, and 1 million of the farm persons who though engaged chiefly in nonagricultural work are also available for farm work. It is indicative of the shifts which will be required under these conditions that the proportion of agricultural workers who are women increases from 17.5 percent in July 1942 to 20.8 percent in July 1943.

The estimated number of workers needed in October 1943 is the same as that for July 1943, but by October some further replacements will probably have to be found. The loss of workers or potential workers from farms during the three months is estimated at 300,000 persons, about equally divided among persons going into the armed forces, those moving from farms to towns and cities, and those shifting into nonagricultural occupations but remaining on farms. Part of the replacement would come from the continued net increase in males of working age, about 50,000 in three months. Replacing the remainder would require going further in drawing upon persons not usually included in the farm labor supply. It might be done by finding 150,000 additional farm women to replace persons leaving the farms or shifting to nonagricultural occupations. The number of persons from nonfarm areas who work on farms might be raised by 100,000 through increased recruiting efforts.

If these substitutions for farm workers are made, then by October 1943, one out of every five farm residents working on farms will be a woman. Although the number of farm women to be drawn into the agricultural labor force is large, only one-fifth of all women living on farms on October 1, 1943 will be working in agriculture, while an additional 14 percent may be employed in nonagricultural occupations.

These estimates are for the major peak seasons of the year, for it seems reasonable to assume that if the needs for workers can be supplied then, the other work will also be done. The degree to which this assumption is true will necessarily vary among the different crops, but on the whole it seems to meet the situation. Not all of the workers needed in July will work the year round. Normally, there is a difference of about 3.5 million workers between the low and the high points in agricultural employment. A large part of the new workers in agriculture will be needed only at the peak seasons.

#### In Conclusion

The estimates given above were calculated on the basis of certain definite assumptions. If these assumptions need to be changed, the estimates also need to be changed. Much might be said about any of these assumptions. For example, it is possible that agriculture's direct share in the increases in the armed forces may be less than is estimated here because many of the eligible young men have already left the farm to take industrial jobs, and therefore, will not come directly from agriculture when they are called for service. Industry may come to place a greater reliance on women than is assumed and draw less on agricultural labor supplies. The net migration from



farms may be considerably less than the 1 million assumed for 1943. Programs to increase production on farms which are not now fully utilizing the labor of the farmer or members of his family may be so successful that fewer workers will be needed. If industry and the armed forces draw more heavily on the areas of agricultural underemployment than on other areas, the number of replacements required would be less than the total number of withdrawals, since the number needed for farm work in these areas would then be less than the number available under present conditions. If any or all of these were to be the case, the situation for agriculture would be somewhat more favorable than is indicated in the tables which are a part of this report. On the whole, it may be that the assumptions selected show the agricultural labor situation as somewhat more strained than will actually be the case.

The situation will be much more strained if, for example, the armed forces are expanded to 9 or 10 million by the end of 1943, instead of to 8 million, or if nonagricultural employment increases by more than is assumed here. Also, unexpected difficulties in recruiting women for nonagricultural employment may make it necessary to dip more deeply into the supply of labor which is assumed here to be available for agriculture, or there may be serious farm machinery shortages. If any or all of these developments occur, greater reliance on workers from unusual sources will become necessary. One element that is difficult to measure is the productivity of the new workers who will need to be used. It may be that they will be so inefficient that the number of these new workers will have to be greater than the number of more experienced workers to be replaced. On the other hand, it may be that the productivity of the experienced workers can be increased to offset the lower efficiency to be expected of the new workers.

These figures show that for the nation as a whole the prospective losses of manpower to industry and the armed forces may be offset by greater utilization of persons not normally used for farm work. However, this does not preclude the probability that in some areas for limited periods there may be acute labor shortages during 1943. It cannot be assumed that all of the workers have the mobility required by a perfect distribution of farm labor or that the present system for distributing labor can achieve 100 percent efficiency. On the other hand, the experience of many areas has already demonstrated that much can be done by planning for efficient utilization of available labor.

For a decade after 1929 agriculture was absorbing workers not needed elsewhere in the economy. During this period a considerable slack developed between the manpower actually required and that available. In addition, a large number of persons found some stop-gap means of assuring a livelihood in rural-nonfarm areas. Today, the situation calls for full utilization of all the manpower. That is not an easy task, for the inefficiently used manpower in agriculture today is not always readily apparent. Nonetheless, the information that is available indicates that there is still in certain portions of the United States, a considerable reservoir of persons in agriculture, farm operators and members of their families, who are not now effectively utilizing their labor, because of inadequate land or capital resources or for other reasons. Many of the workers on these farms could substantially increase their contribution to total national production if capital goods and training could be supplied. Others could contribute substantially if they were relocated in more productive agricultural areas, and some could contribute most through programs for training for and placement in nonagricultural occupations.



The fact that a large proportion of agricultural workers consists of the farm operator and members of his family and only a small part of hired workers introduces elements into the whole situation which make the problems of finding manpower different in agriculture from those of other industries. At a slack time, such as January 1, 1942 the total number of persons working in agriculture was reported as 8,287,000; of these 6,632,000 were operators and unpaid members of their families. In a normal year the number of workers in agriculture increases by approximately 40 percent between January and July. In 1942, the total number of workers in agriculture had actually increased by 3,722,000 from January to July, but three-fifths of the increase was in the number of family workers; only two-fifths of the increase was hired workers. That these hired workers are crucial in many areas is well known. But apparently agriculture, like many other industries, including some that have grown rapidly during the war, will have to find ways of recruiting, training, and using types of workers who formerly were not considered in the labor market, in order to meet the losses occasioned by the fact that many workers of the type to which agriculture had become accustomed are being used elsewhere.



Table 1.-Manpower Estimates for Industry 1/ and Agriculture, 2/ April 1940 to October 1943

(Millions of Persons)

Employment and industry category	1940		1941		1942		1943	
	April	1: July 1	Oct. 1	July 1	Oct. 1	July 1	Oct. 1	Oct. 1
Total population, 14 years old and over 3/	101.3	102.5	102.8	103.6	103.9	104.7	105.0	
Not in labor force	46.7	44.3	45.3	44.8	44.2	41.3	40.8	
In labor force	54.6	58.2	57.5	58.8	59.7	63.4	64.2	
Armed forces 4/	5.5	1.8	2.0	3.5	4.2	6.7	7.5	
Civilian labor force	54.1	56.4	55.5	55.3	55.5	56.7	56.7	
Unemployed (including work-relief)	8.8	5.8	4.1	2.7	2.5	2.2	2.1	
Employed	45.3	50.6	51.4	52.6	53.0	54.5	54.6	
Nonagricultural employment	36.1	39.9	40.7	42.1	42.5	44.0	44.1	
Agricultural employment 5/	9.2	10.7	10.7	10.5	10.5	10.5	10.5	
Rural-farm persons	8.3	9.5	9.5	9.3	9.3	9.1	9.0	
Nonfarm persons	.9	1.2	1.2	1.2	1.2	1.4	1.5	
Farm employment, persons under 14	.2	.4	.5	.6	.6	.7	.7	
Employed in agriculture and other occupations 6/	.3	.8	.8	.9	.9	1.0	1.0	
Total farm employment 2/	9.7	11.9	12.0	12.0	12.0	12.2	12.2	

1/ Estimates of nonagricultural employment (and of total unemployment) subsequent to July 1942 are obtained from estimates prepared by the Bureau of Labor Statistics and the Bureau of Employment Security for December 1942 and December 1943, interpolated for July 1 and October 1 dates. These estimates are based on total war expenditures (in constant dollars) at an annual rate of \$69 billion in December 1942 and \$84 billion in December 1943, with corresponding munitions and construction expenditures of \$60 billion and \$75 billion respectively, exclusive of off-shore construction expenditures. Nonagricultural employment and total unemployment data prior to July 1942 are estimates of the Work Projects Administration (revised series), adjusted to a first of the month basis.

2/ The total farm employment estimates for 1943 are based on manpower requirements assuming an overall increase in the volume of 1943 agricultural production of 5 percent over that of 1942, and a further increase in the efficiency of labor utilization. Total farm employment estimates for July 1, 1942 and prior dates are estimates of the Bureau of Agricultural Economics. (Footnotes continued on next page)



Table 2.-Estimated Effects of War Mobilization upon Rural-Farm Population and Farm Labor Supply, April 1940 - October 1943

(Thousands of Persons)

Losses - cumulative since April 1, 1940 to:.....	1942		1943	
	July 1	October 1	July 1	October 1
Migration from farm population.....	1,643	1,871	2,690	2,926
1. Military inductions 1/.....	456	560	934	1,047
2. Net civilian migration - all ages.....	1,187	1,311	1,756	1,879
Persons 14 years old and over.....	907	1,002	1,343	1,438
Net withdrawals from on-farm agricultural labor supply through shifts into other occupations	800	1,000	1,100	1,200
Total net losses:				
Persons 14 years old and over	2,163	2,562	3,377	3,685
Persons - all ages	2,443	2,871	3,790	4,126

1/ Unofficial. These estimates are of persons taken into the armed forces, and are based on information available prior to June 1942 on proportion of inductees reported as farmers and farm workers.

Footnotes for Table 1 (continued from preceding page)

- 3/ Population 14 years old and over for April 1, 1940 from Population Census, 1940. Estimates for subsequent dates are interpolations between the 1940 Census figure and National Resources Planning Board estimates for 1945.
- 4/ Unofficial, based on the assumption that 8 million men will be in the armed forces by the end of 1943. The figures for the armed forces in 1940 and 1941 are based on data released prior to December 7, 1941.
- 5/ Excludes farm workers under 14 years of age and also workers engaged in nonagricultural occupations a greater part of the indicated work-week.
- 6/ An estimate of the number of persons engaged in agriculture for a lesser part of the work-week than in some nonagricultural occupation.



Table 3.-Estimates of Numbers and Employment Status for the Rural-Farm Population, 1/ April 1940 to October 1943  
(Thousands of Persons)

Employment status	1940		1942		1943	
	April 1	October 1	July 1	October 1	July 1	October 1
Total rural-farm population (all ages)	30,216	29,358	29,218	28,585	28,398	
Persons 14 years old and over	21,357	20,884	20,835	20,339	20,249	
Not in labor force	9,998	7,769	7,539	7,114	6,978	
In labor force	11,359	13,115	13,296	13,225	13,271	
Employed in agriculture	8,285	9,307	9,306	9,068	9,021	
Employed in nonagriculture	2,070	3,500	3,705	3,906	4,010	
Unemployed	1,004	308	285	251	240	
Males (all ages)	15,940	15,228	15,094	14,569	14,411	
Persons 14 years old and over	11,418	10,915	10,829	10,376	10,269	
Not in labor force	1,355	563	498	477	472	
In labor force	10,063	10,352	10,331	9,899	9,797	
Employed in agriculture	7,805	7,677	7,585	7,177	7,064	
Employed in nonagriculture	1,437	2,450	2,541	2,541	2,563	
Unemployed	821	225	205	181	170	
Females (all ages)	14,276	14,130	14,124	14,016	13,987	
Persons 14 years old and over	9,939	9,969	10,006	9,963	9,980	
Not in labor force	8,643	7,206	7,041	6,637	6,506	
In labor force	1,296	2,763	2,965	3,326	3,474	
Employed in agriculture	480	1,630	1,721	1,891	1,957	
Employed in nonagriculture	633	1,050	1,164	1,365	1,447	
Unemployed	183	83	80	70	70	

1/ Population figures for April 1, 1940 from the Population Census, 1940. Labor force data for April 1, 1940 are based on upward adjustments of Census data on rural-farm unemployment and agricultural employment in line with estimates prepared by the Work Projects Administration and by the Bureau of Agricultural Economics. All other figures are estimates made by the Bureau of Agricultural Economics.